

SECTION C Descriptions and Specifications

I. OBJECTIVE

The objective of this contract is to obtain technical services to support the operation of the Metrology and Calibration Service Cost Center (METCAL SCC) at the Naval Surface Warfare Center, Carderock Division (NSWCCD). The services are required to operate an Instrumentation Library and to provide calibration and repair support for inspection, measuring and test equipment (IM&TE), measurement standards, IM&TE systems and other equipment used by NSWCCD.

II. BACKGROUND

- A. The METCAL SCC operates an Instrumentation Library. The library is a pool of IM&TE that is available for use by NSWCCD technical personnel. Users are charged a fee for borrowing library equipment. The library presently has an inventory of approximately 1,600 items valued at \$2.5 million. The library facilities are located at NSWCCD, West Bethesda, MD and at NSWCCD-SSES, Philadelphia, PA. Authorized NSWCCD employees are issued library equipment as needed, and return equipment when they no longer require it, back to the library facilities at these locations. These locations are also used to receive library and non-library equipment that require calibration and/or repair.
- B. The METCAL SCC maintains a Navy Type III Reference Standards Laboratory, which provides calibration and repair services to the NSWCCD technical codes. The Navy Calibration Laboratory Code assigned to the Reference Standards Laboratory is 'YFS'. The laboratory has an electrical/electronic calibration area and a physical/mechanical calibration area located in West Bethesda, MD. The laboratory also has a liquid flow calibration facility located at NSWCCD-SSES, Philadelphia, PA. There are presently approximately 520 calibration laboratory measurement standards valued at \$1.2 million. Historically, the laboratory services 3,000 to 6,000 items per year. The IM&TE serviced by the laboratory are used in NSWCCD research, development, test and evaluation programs to measure physical quantities such as: force, moments, pressure, temperature, acceleration, velocity, displacement, strain, voltage, current, frequency, time, and electromagnetic signature properties. IM&TE are also used to support research, development, test and evaluation programs at NSWCCD detachments, aboard Naval vehicles (ships, submarines, aircraft, etc.), and at other field test sites. The METCAL SCC charges users for the calibration and repair of Non-Library equipment.
- C. Many of the NSWCCD technical codes and research facilities have special project and dedicated IM&TE systems. NSWCCD has approximately 15,000 IM&TE assets.
- D. NSWCCD owns portable and laboratory type instrumentation quality analog and digital tape recorders that must be maintained. These recorders are used to record signals using FM, direct, or high-

density digital recording techniques. The tape recorders meet Inter-Range Instrumentation Group (IRIG) standards and typically record 7, 14, or 28 channels of data. Typical brands of tape recorders that are maintained include Ampex, Honeywell, EMI, TEAC, Sony, and Racal.

- E. Many of the NSWCCD research facilities have electronic components that are part of the electrical/electronic/hydraulic systems used to control these facilities, which require calibration and maintenance.
- F. NSWCCD also possesses a limited amount of microwave, optical, and infrared equipment that requires calibration and maintenance.

III. OVERVIEW OF SERVICES TO BE PERFORMED

The contractor shall provide the following services:

- A. Electronic technician services to install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain IM&TE and measurement standards.
- B. Electronic technician services to install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain control and measurement systems.
- C. Electronic engineering services to automate equipment calibration, repair, and inventory operations and to review, revise, and develop calibration procedures for IM&TE, IM&TE systems, and measurement standards.
- D. Services to support the operation of the NSWCCD Reference Standards Laboratory, Navy Lab Code 'YFS', which include, but are not limited to, providing a quality program that complies with ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements) and maintaining Navy Calibration Laboratory Certification in accordance with NAVSEA 04-4734 (Naval and Marine Corps Calibration Laboratory Audit/Certification Manual).
- E. Services to support the operation of the NSWCCD METCAL SCC, which include, but are not limited to, maintaining accountability for Laboratory and Library equipment and subcontracting outside equipment rentals, inventory services, engineering services, software development, calibrations and repairs.

IV. TASK 1 - CALIBRATION AND REPAIR SERVICES

The contractor shall provide the following services as applicable:

- A. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain IM&TE and other equipment which are in the METCAL SCC Instrumentation Library including control and measurement systems.

- B. Calibrate or perform acceptance tests on new IM&TE and IM&TE that were sent off-station for repair and calibration.
- C. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain facility IM&TE and control equipment including control and measurement systems.
- D. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain special project IM&TE and control equipment including control and measurement systems.
- E. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain calibration laboratory measurement standards.
- F. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain analog/digital tape recorders.
- G. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain IM&TE and control equipment including control and measurement systems at NSWCCD detachments, remote sites and aboard Navy vehicles.
- H. Determine authorized calibration intervals, approved calibration procedures, and related technical data using NAVSEA OD 45845, Metrology Requirements List (METRL).
- I. Maintain a centralized file identifying the calibration status of all IM&TE and measurement standards submitted to the NSWCCD Reference Standards Lab, Navy Lab Code 'YFS', for a Navy Calibration Label.
- J. Arrange for calibration and repair of IM&TE and measurement standards by outside contractors, or other Government activities.
- K. Coordinate the Metrology Automated System for Uniform Recall and Reporting (MEASURE) program for equipment that has been submitted to the NSWCCD Reference Standards Laboratory for a Navy calibration Label. Using the Navy Calibration Recall and Inventory System (CRIS), enter the calibration and inventory information required by the MEASURE program.
- L. Issue monthly calibration recalls to equipment custodians notifying them of upcoming and overdue calibrations.
- M. Develop, modify, or validate calibration procedures for IM&TE used for quantitative applications and measurement standards. The procedures shall be developed according to Navy METCAL instructions for developing calibration procedures utilizing NAVAIR 17-35TR-04 (Requirements for Preparation and Submission of Instrument Calibration Procedures) to provide guidance. The procedures shall be submitted to the Measurement Science Directorate, Naval Surface Warfare Center, Corona Division (NSWCCOR) for technical review and approval.

- N. Maintain Navy calibration activity certification for the NSWCCD Reference Standards Laboratory, Navy Lab Code 'YFS'.
 - O. Maintain up to date files of calibration documentation including calibration procedures, instructions, training, and certification records.
 - P. Maintain files of current maintenance work orders and maintenance manuals.
 - Q. Implement a quality assurance program for the NSWCCD Reference Standards Laboratory, Navy Lab Code 'YFS' that complies with ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements) and maintain Navy Calibration Laboratory Certification in accordance with NAVSEA 04-4734 (Naval and Marine Corps Calibration Laboratory Audit/Certification Manual).
 - R. Provide technical consultation and support in all areas of metrology and calibration to NSWCCD personnel.
 - S. Prepare and submit required calibration certificates/reports.
 - T. Use the appropriate measurement standards to measure the performance of special purpose instrumentation developed at NSWCCD or measure the performance of instruments modified at NSWCCD.
 - U. Develop, document and submit test procedures for IM&TE and measurement standards which have no test procedures or which have test procedures that the Contracting Officer's Representative (COR) determines are inadequate.
 - V. Prepare and submit progress, status and management reports consequent to the calibration and repair task.
 - W. Fabricate and install input and output cables for IM&TE, measurement standards, control equipment, and associated transducers/sensors including computer based control and measurement systems.
- V. TASK 2 - CALIBRATION AUTOMATION ENGINEER SERVICES

The contractor shall provide the following types of services:

- A. Develop, document, and submit new calibration procedures for IM&TE, IM&TE systems, and measurement standards that do not have procedures or review and revise existing procedures which are inadequate as determined by the COR. The procedures shall be developed according to Navy METCAL instructions for developing calibration procedures utilizing NAVAIR 17-35TR-04 (Requirements for Preparation and Submission of Instrument Calibration Procedures) to provide guidance. The procedures shall be submitted to the Measurement Science Directorate, Naval Surface Warfare Center, Corona Division (NSWCCOR) for technical review and approval.
- B. Set up automatic test systems including developing the engineering design data utilizing NAVSEA TT700-AA-CAL-010/TR-1 (Technical

- Requirements for Calibration of Test and Monitoring Systems), NAVAIR 17-35TR-2 (Automatic Test Equipment Calibration Requirements Analysis) and NAVAIR 17-35TR-3 (Technical Requirements for Calibration Test Program Sets for Automatic Test Equipment) as guidelines.
- C. Provide technical assistance as required by electronic technicians in the performance of their duties.
 - D. Set up and maintain databases as required on IBM compatible personal computers (PC's).
 - E. Prepare and submit scientific and technical reports.
 - F. Develop and submit Calibration and Measurement Requirements Summary (CMRS) documents.
 - G. Develop, document and submit test procedures for IM&TE and measurement standards which have no test procedures or which have test procedures that the Contracting Officer's Representative (COR) determines are inadequate and require engineering skills to develop.
 - H. Prepare and submit progress, status and management reports consequent to the calibration automation engineer task.
 - I. Provide recommendations to the COR for equipment (standards, test equipment, automated test equipment, automated calibration equipment, etc.), parts and supplies that should be procured to enhance the effectiveness and efficiency of the services provided by the METCAL SCC.
 - J. Install, operate, align, inspect, troubleshoot, repair, overhaul, modify, calibrate, and maintain equipment which requires engineering skills to perform.
 - K. Provide technical consultation and support in all areas of metrology and calibration to NSWCCD personnel.

VI. TASK 3 - EQUIPMENT ISSUE & INVENTORY SERVICES AND FINANCIAL RECORD GENERATION

The contractor shall provide the following types of services:

- A. Receive and inspect IM&TE and other equipment delivered to NSWCCD and create new Plant Account records for new equipment.
- B. Issue, return and transfer equipment including any accessories required for their operation to authorized custodians ensuring that the custody forms have been signed and properly filed for equipment accountability.
- C. Maintain instrumentation library equipment custody file(s) for equipment accountability.
- D. Maintain inventories of accessories and supplies needed to support the Library and the Calibration/Repair Laboratory.

- E. Perform inventory functions for NSWCCD equipment.
- F. Maintain NSWCCD records and file systems on equipment inventories, custodians, and calibration recall schedules.
- G. Prepare and submit progress, status and management reports consequent to the equipment issue and inventory task.
- H. Perform functional checks and maintenance on Library equipment to be sure that they are working properly.
- I. Pick-up, transport, and deliver equipment, repair parts, and supplies from/to NSWCCD test sites, instrument labs, storage areas, pick-up and drop-off areas, and off-site sources of repair parts, supplies, and calibration and repair services. The Contractor shall provide the proper vehicle(s) for this task such as a cargo van (See paragraph X of Section C).
- J. Maintain records on Instrumentation Library usage and usage fees.
- K. Maintain records on the repair and/or calibration of Non-Library equipment and other support services and the associated fees.
- L. Prepare equipment that the Government has determined is no longer required at NSWCCD, is obsolete, or is beyond economical repair for transfer to the appropriate redistribution office, and maintain associated files.

VII. GOVERNMENT FURNISHED EQUIPMENT

- A. Handcarts and Other Vehicles - The Government will furnish handcarts for moving equipment around within the METCAL SCC facilities. A forklift will be provided with an operator as required to move large equipment.

NOTE: The Contractor shall be responsible for providing a Vehicle(s) for Transporting Government Equipment that does not require the use of a forklift.

- B. Rigging Services - The Government will furnish any rigging services the COR determines are required to transport Government equipment.
- C. Workspace, Furnishings, Government Forms, and Photocopy Equipment - The Government will furnish, at no cost to the Contractor, workspace including workbenches, desks, and furnishings as required to perform the work required by this statement of work. The Government will also supply the necessary Government forms and access to photocopy equipment.
- D. Manuals, Procedures, Drawings - The Government will provide equipment manuals, calibration and repair procedures, and drawings that are on hand. The Contractor shall be responsible for the upkeep and proper filing of this material. The Contractor shall also be responsible for returning the material to the appropriate storage location immediately after use.

- E. Test Equipment, Calibration Standards - IM&TE, measurement standards, and other special equipment required to perform the work will be provided by the Government for use by the Contractor at the work site. The Contractor shall acknowledge receipt of, keep an accurate record of, and be responsible for all Government equipment furnished under this contract. Reference FAR 52.245-5 GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS)(JAN 1986)(DEVIATION).
- F. Instrumentation Library Equipment - The Government will provide NSWCCD Instrumentation Library equipment. The Contractor shall acknowledge receipt of, keep an accurate record of, and be responsible for the accountability and maintenance of this equipment. A listing of all equipment, updated as of date of award, will be provided to the Contractor at time of award. Instrument library equipment custody files shall be kept accurate and up-to-date. All equipment issue, return and transfer forms shall be signed and filed by the contractor. Reference FAR 52.245-5 GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS)(JAN 1986)(DEVIATION).
- G. Computers - The Government will provide the Contractor with computers for use in maintaining and updating the NSWCCD computerized files on equipment inventories, parts inventories, custodians, equipment maintenance, and calibration recall schedules. Reference FAR 52.245-5 GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS)(JAN 1986)(DEVIATION).
- H. A list of Government Furnished Equipment (GFE) is incorporated as Attachment 6 of Section J of this document. A current list of GFE will be maintained by the NSWCCD METCAL SCC.

VIII. GOVERNMENT FURNISHED SERVICES

- A. As provided to NSWCCD personnel, the Government will provide utility service (electricity, water, sewage, heating), on-site Postal service (for official Government use only); refuse collection, rodent control, custodial service, and grounds maintenance.
 - B. Telephone Service - The Government will provide telephone service to be used in support of official Government business associated with the performance of this contract. The Contractor shall reimburse the Government for all calls determined otherwise.
- IX. GOVERNMENT FURNISHED INFORMATION - To be provided with technical directives during contract performance.
- A. Calibration, Repair and Calibration/Automation Engineer Tasks
 - 1. ANSI/NCSL Z540-1-1994, American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements

2. ISO/ISE 17025, General requirements for the competence of testing and calibration laboratories.
3. NAVAIR 17-35FR-06, Facility Requirements for Navy Calibration Laboratories - Contained in the Navy Metrology Products (METPRO) Compact Disk (CD).
4. NAVAIR 17-35TR-2, Automatic Test Equipment (ATE) Calibration Requirements Analysis (CRA) - Contained in the Navy Metrology Products (METPRO) CD.
5. NAVAIR 17-35TR-3, Technical Requirements For Calibration Test Program Sets (CTPS) For Automatic Test Equipment (ATE) - Contained in the Navy Metrology Products (METPRO) CD.
6. NAVAIR 17-35TR-04, Requirements for Preparation and Submission of Instrument Calibration Procedures - Contained in the Navy Metrology Products (METPRO) CD.
7. NAVSEA 04-4734, Naval and Marine Corps Calibration Laboratory Audit/Certification Manual
8. NAVSEA INSTRUCTION 4734.1A, Metrology and Calibration (METCAL) Program
9. NAVSEA OD 45845, Metrology Requirements List (METRL) - Contained in the Navy Metrology Products (METPRO) CD.
10. NAVSEA OD 48939, Navy Calibration Equipment (NCE) List - Contained in the Navy Metrology Products (METPRO) CD.
11. NAVSEA ST700-AM-GYD-010/METCAL, Metrology and Calibration (METCAL) Laboratory Requirements and Certification Guide
12. NAVSEA ST700-AM-PRO-010/TAMS, Test and Monitoring Systems (TAMS) Program Operations and Procedures Manual
13. NAVSEA TT700-AA-CAL-010/TR-1 - Technical Requirements for Calibration of Test and Monitoring Systems (TAMS) - Contained in the Navy Metrology Products (METPRO) CD.
14. NAVSEA TT700-AB-CAL-010/TR-5 - Technical Requirements for Calibration Interval Establishment for Test and Monitoring Systems - Contained in the Navy Metrology Products (METPRO) CD.
15. NAVY Metrology Products (METPRO) CD, Contains Metrology Requirements List (METRL), Navy Calibration Equipment (NCE) List, the Navy Calibration Activity (NCA) list, Approved Instrument Calibration Procedures, and Approved Miscellaneous Metrology Publications. The Measurement Science Directorate, Naval Surface Warfare Center, Corona Division (NSWCCOR) distributes the Compact Disk.
16. NSWCCD INSTRUCTION 4734.1A, Metrology and Calibration Program

17. NSWCCD Division Management System Quality Manual/Quality Procedures
18. OPNAVINST 3960.16, Navy Test and Monitoring Systems (TAMS)
19. OPNAV INSTRUCTION 5100.23F - Navy Occupational Safety and Health (NAVOSH) Program
20. SECNAV INSTRUCTION 3960.6, Department of the Navy Policy and Responsibility for Test, Measurement, Monitoring, Diagnostic Equipment and Systems, and Metrology and Calibration (METCAL).
21. List of IM&TE and measurement standards requiring calibration procedures.
22. List of systems for which system calibration procedures are required.
23. List of automated calibration functions to be implemented.
24. List of database tracking systems to develop.
25. List of equipment that must be installed, operated, aligned, inspected, troubleshot, repaired, overhauled, modified, calibrated, and maintained.
26. List of computer reports required from the Instrumentation Library's computerized databases.
27. Priorities with which the items listed above are to be accomplished.

B. Equipment Issue & Inventory Services and Financial Record Generation Task

1. Various lists of NSWCCD equipment.
2. Lists of authorized equipment custodians (NSWCCD personnel who are permitted to borrow equipment from the Instrumentation Library).
3. Various logs, databases and files that have been set-up as part of the NSWCCD equipment management program.
4. Instrument pick-up and delivery locations.
5. Equipment Inventory Listing.

X. SPECIAL PROVISIONS

A. Normal Place of Performance and Reimbursement for Travel Costs

Work will normally be performed within the METCAL SCC facilities or work sites located at Carderock, MD. The contractor may be required to provide technicians to work within the METCAL SCC facilities or work sites located at NSWCCD-SSS, Philadelphia, PA.

On occasion, work may be required at NSWCCD detachments, remote sites, or aboard Naval vehicles.

B. Program Management

1. The Contractor shall provide a program manager who shall be responsible for the performance of the work. The name of this person and an alternate, who shall act for the Contractor when the program manager is absent, shall be designated in writing to the Contracting Officer and to the COR at time of award.
2. The program manager or alternate shall be available during normal working hours and shall have full authority to act for the Contractor on all contract matters relating to daily operation of this contract.
3. The Contract Calibration/Automation Engineer shall provide full time on-site technical and administrative supervision of contractor personnel. This person shall interface with the COR on a daily basis. An alternate shall be identified to act as the on-site supervisor during any absence of the Calibration/Automation Engineer. A Lead Calibration/Repair Technician shall be identified as an alternate.
4. The Contractor may choose to have the Calibration/Automation Engineer also serve as the program manager.

C. Transportation of Government Equipment

The Contractor will be required to provide a vehicle(s) for transportation of Government equipment that includes IM&TE, IM&TE systems, measurement standards, computers, computer systems, repair parts, and supplies required to support this contract. The vehicle(s) shall be modified to ensure safe transportation of delicate instrumentation. The modifications shall include, but not be limited to: shelving, racks, pads, securing straps, and tie downs. The modifications shall be constructed in such a way as to accommodate a wide range of instrument types and sizes. The cargo shall be secured in such a way as to prevent damage and/or injury as a result of a sudden stop or impact. It shall be the Contractor's responsibility to ensure that the Government equipment is not damaged in transportation when utilizing the vehicle(s). Liability shall be in accordance with FAR 52.245-5 GOVERNMENT PROPERTY (COST-REIMBURSEMENT, TIME-AND-MATERIAL, OR LABOR-HOUR CONTRACTS)(JAN 1986)(DEVIATION).

If Government equipment or material is required to be shipped to or from NSWCCD, the Contractor shall coordinate shipping in accordance with local NSWCCD shipping policies and procedures.

D. Hours of Work

Details of the hours of work for this contract are described below.

It is the Government's intent to have the services provided on a full time basis during performance as determined by the Government.

Overtime shall not be worked unless approval is obtained from the Contracting Officer's Representative in the form of a written technical instruction.

1. Work shall be scheduled 8 hours a day, 5 days a week, excluding Federal Holidays.
2. Work shall be performed between the hours of 0600 and 1730 with a 30-minute lunch period to be taken between the hours of 1100 and 1300 Monday through Friday, excluding Federal Holidays. This allows up to 3 hours flex time during the normal duty day.
3. Odd hour shifts, such as second or third shift or combinations of these may be required. Odd shift hours shall only be worked with written approval, in advance, from the COR.
4. Overtime may be required to meet critical deadlines. Overtime shall only be worked if authorized via a written technical instruction from the COR.
5. When possible, the Government will provide notification of the need for overtime 24 hours in advance. However, shorter notice may be given in the case of emergencies.
6. If an NSWCCD site is closed because of an emergency condition (e.g., snow, power outage, natural catastrophe, security threat, etc.) or by executive order, Contractor employees at the same site shall be excused from work for the same period of time as Government employees. In such a circumstance, Contractor employees scheduled to work at that time will be reimbursed for up to eight hours per employee per day, not to exceed 5 days during any Lot year as specified in Section B. However, if the Government considers any of the employees to be essential personnel at the time of closure and requires them to report to work, they will not be excused from work.

E. Extensive Overtime and/or Travel

In rare instances, the Contractor may be required to travel for extended periods of time (greater than 30 days). Also, overtime may be required for extended periods of time (e.g., overtime of 10 to 12 hours per day, 7 days a week, for several weeks). As stated above, overtime shall only be worked if authorized in a written technical instruction from the COR, prior to the overtime taking place.

F. Quality Reviews

The Government reserves the right to periodically conduct reviews of the Contractor's performance. These reviews may include but are not limited to: quality of work, quantity of work, safety procedures, accuracy and completeness of instrument calibrations, quality and completeness of repairs, accuracy and completeness of calibration, repair, and inventory records, logs, databases, files, and reports, the time required to perform the specified tasks, and

the cleanliness and orderliness of work and equipment storage areas.

G. Performance Requirements Summary (PRS)

The Performance Requirements Summary (PRS), Section J, Attachment 1 of this document, identifies the key performance indicators that will be evaluated by the Government to assure that the contractor meets performance standards.

H. Acceptable Quality Level (AQL)

The maximum percentage of defective units or the maximum number of defects per hundred that can occur in an acceptable performance of a task. The AQL is the deviation from perfect performance before the Government will consider the Contractor's performance unsatisfactory. The AQL does not allow the Contractor to knowingly offer defective services, but identifies thresholds of unsatisfactory performance. The notes as reflected in Section J, Attachment 1 discussing performance surveillance are as follows:

1. Surveillance period will be for the duration of a Lot Year.
2. If the AQL is exceeded, then the deductions are assessed for all of the unsatisfactory service.
3. A repair shall be judged unsatisfactory if the original malfunction is verified to persist or reoccurs no later than 30 calendar days after the completion date of the repair that was made to correct the malfunction.
4. If applicable, a deduction will be applied to the last invoice of the Lot in which the AQL was exceeded. Formula used for calculation:

$$\text{Deduction} = (\text{Lot Funding Limit}) \times (\text{Deduct Percentage}) \times (\text{Percentage Unsatisfactory Service})$$

5. Example Calculation:

Suppose during a surveillance period it was determined that 4% of the calibrations were unsatisfactory, and suppose the lot funding limit is \$700K.

Then,

$$\text{Deduction} = (\$700K)(0.3)(0.04) = \$8400$$

I. Quality Control

The Contractor shall establish and maintain a complete Quality Control Plan to assure the requirements of the contract are met as specified. The plan shall include:

1. A written description of the Contractor's calibration system covering Inspection, Measuring and Test Equipment (IM&TE) and

measurement standards to satisfy each requirement of ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements).

2. An inspection system covering all of the services listed in Section J, Attachment 1 (Performance Requirements Summary). The inspection system shall specify the areas to be inspected on either a scheduled or unscheduled basis, how often inspections will be accomplished, and the title of the individual(s) who will perform the inspections.

3. The methods for identifying and preventing deficiencies in the quality of service performed before the level of performance becomes unacceptable.

4. Methods for assuring compliance with contract Data Requirements List, DD Forms 1423.

5. Methods of tracking subcontract efforts and procurements.

6. Methods of generating and following through on positive actions to correct deficiencies.

7. Performance standards the Contractor is going to use to judge that each Contractor employee provided under this contract produces work of satisfactory quality and quantity.

J. Contractor Performance Evaluations

The Government will evaluate the Contractor's performance in accordance with the Performance Requirements Summary (PRS), Section J, Attachment 1. The Contracting Officer shall be the final authority for determining the acceptability of the Contractor's performance.

K. Working Meetings

The Program Manager shall meet at least weekly with the COR during the first month of the contract. Meetings shall be at the COR's office. After the first month, meetings will be held as called by the COR. The meetings will be used to discuss contract problem areas and to discuss corrective actions.

L. Training

The Contractor shall provide fully trained personnel and provide periodic continuing training to keep employees current with the state of the art. This includes providing training for the repair and calibration of new IM&TE and measurement standards added to the NSWCCD inventory. The COR may require the Contractor to send personnel to off-site training courses or seminars to meet this requirement. Any courses or seminars attended, based on recommendations of the COR, will be reimbursable.

M. Good Housekeeping

Work and storage areas shall be free of excessive debris, oils, dirt, food residue, dampness or other conditions detrimental to the calibration, repair, and storage of IM&TE and measurement standards. There shall be no eating or storage of food within the environmentally controlled calibration laboratory areas.

N. Smoke Free Environment

There shall be no smoking within any of the work areas.

O. Appropriate Dress

Since Contractor personnel are required to interface with NSWCCD employees (visit offices, laboratories, and test facilities) as part of their duties, appropriate dress shall be worn. Wearing shorts, muscle shirts, sweat pants, and open toe footwear will not be considered appropriate for the NSWCCD work environment.

P. Safety

The Contractor shall comply with all Navy occupational health and safety regulations.

Q. Equipment Handling, Preservation, and Storage

IM&TE and measurement standards shall be handled, stored, and transported in a manner that shall not adversely affect the accuracy or condition of the equipment. Where equipment must be stored or conditioned under specific environmental conditions, these conditions shall be maintained, monitored, and recorded where necessary.

R. Physical Security

The Contractor shall be responsible for safeguarding all Government property provided for Contractor use. At the close of each work day, Government facilities, equipment, and materials shall be secured. A daily log shall be maintained specifying areas secured and initialed by the individual responsible for securing each area.

S. Conservation of Utilities

The Contractor shall be directly responsible for instructing employees in utilities conservation practices. The Contractor shall be responsible for operation under conditions that preclude the waste of utilities, including inefficient use of lighting and uneconomical use of water.

T. Backup for Task 3

On occasion, the COR may require the on-site manager or program manager to have any or all of the services required under Task 3 performed by contract personnel normally assigned to work in the other task areas.

U. Equipment Rentals

When required by the COR, the Contractor shall rent equipment needed for urgent use in the METCAL SCC facilities or in NSWCCD test programs. The Contractor shall be responsible to ensure that all rental IM&TE are calibrated in compliance with ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements). The Contractor shall be responsible for the timely issue and return of rental equipment. As rentals are received, the Government shall be supplied with invoices detailing rental rate and period of rental agreement for each item.

If a NSWCCD test program is extended and/or it becomes an uneconomical alternative to continue renting an item, the Government may direct the Contractor to purchase the item at its "buy-out" price. Any rental equipment purchased shall be assigned a Navy Identification Number and added to the NSWCCD Plant Account Inventory. The Government shall be supplied with invoices detailing quantity, type, and unit cost of each item.

V. Software

When required by the COR, the Contractor shall procure off the shelf software needed for use with Instrumentation Library and Calibration Laboratory computers. As procurements are received, the Government shall be supplied with invoices detailing quantity, type, and unit cost of each item.

XI. SPECIAL PROVISIONS UNDER THE CALIBRATION AND REPAIR TASK

The following provisions shall apply to the calibration and repair task:

A. NAVSEA Type III Reference Standards Laboratory Policies/Procedures

1. The NSWCCD Reference Standards Laboratory, Navy Lab Code 'YFS', shall be operated by the Contractor utilizing SECNAV Instruction 3960.6 (Department of the Navy Policy and Responsibility for Test, Measurement, Monitoring, Diagnostic Equipment and Systems, and Metrology and Calibration), OPNAV Instruction 3960.16 (Navy Test and Monitoring Systems), NAVSEA ST700-AM-GYD-010/METCAL (Metrology and Calibration Laboratory Requirements and Certification Guide), NAVSEA ST700-AM-PRO-010/TAMS (Test and Monitoring Systems Program Operations and Procedures Manual), NAVSEA Instruction 4734.1A (Metrology and Calibration Program), NSWCCD Instruction 4734.1A (Metrology and Calibration Program) and NAVSEA 04-4734 (Naval and Marine Corps Calibration Laboratory Audit/Certification Manual) to provide guidance.

2. The Chief of Naval Operations (CNO) has adopted ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements) as the primary basis for criteria to ensure Naval calibration laboratories are capable of performing required calibration measurements. The Contractor must ensure that the

NSWCCD Reference Standards Laboratory, Navy Lab Code 'YFS', demonstrates conformance to this standard in accordance with NAVSEA 04-4734 (Naval and Marine Corps Calibration Laboratory Audit/Certification Manual).

3. NAVSEA 04-4734 (Naval and Marine Corps Calibration Laboratory Audit/Certification Manual) was written to provide guidance for interpreting and applying the criteria set forth in ANSI/NCSL Z540-1-1994 to the Navy Calibration Program. OPNAV Instruction 3960.16 (Navy Test and Monitoring Systems) requires that all Naval calibration laboratories/activities be reviewed at least once every three years to ensure compliance with Navy Directives and Instructions. The NSWCCD Reference Standards Laboratory shall maintain certification in accordance with NAVSEA 04-4734 by arranging for periodic audits to be performed by the Navy Fleet Technical Support Center, Atlantic Calibration Capability Audit Team located in Norfolk VA.

4. NAVSEA TT700-AA-CAL-010/TR1, Technical Requirements For Calibration of Test and Monitoring Systems (TAMS) provides guidance as a baseline for technical decisions relating to analysis of calibration requirements, determination of calibration approaches, selection and application of calibration equipment, preparation of calibration procedures and implementation of requirements for support of Navy Test and Monitoring Systems (TAMS).

5. Inspection, Measuring and Test Equipment (IM&TE) and measurement standards shall be calibrated and utilized in an environment controlled to the extent necessary to assure continued measurements of required accuracy, given due consideration to temperature, humidity, vibration, cleanliness, and other controllable factors. NAVAIR 17-35FR-06 (Facility Requirements for Navy Calibration Laboratories) provides guidance for environmental control.

6. NAVSEA TT700-AB-CAL-010/TR-5, Technical Requirements for Calibration Interval Establishment for Test and Monitoring Systems (TAMS), provides guidance on criteria, definitions, and guidelines for establishment and adjustment of calibration intervals for Navy TAMS.

7. NAVSEA OD 45845, Metrology Requirements List (METRL), provides guidance for determining authorized Navy calibration intervals and Navy approved calibration procedures. Calibrations shall be performed in accordance with intervals established in the METRL. However, when there is reason to suspect the accuracy of equipment (e.g. disagreement with other IM&TE or measurement standards, rough handling, damage, etc.), the equipment should be recalibrated even though the current calibration has not expired.

8. Inspection, Measuring and Test Equipment (IM&TE) and measurement standards shall be labeled to indicate calibration status. NAVSEA ST700-AM-GYD-010/METCAL, Metrology and Calibration Laboratory Requirements and Certification Guide, provides guidance on the description and use of Navy calibration labels and tags.

B. Calibration Documentation

1. Records

The records for IM&TE and measurement standards shall include an individual record documenting the calibration status for each item. A calibration status file must be maintained that includes all TAMS and measurement standards submitted to the NSWCCD Reference Standards Laboratory for a calibration label.

2. Instrument Calibration Procedures

All calibrations of IM&TE and measurement standards shall be performed using approved Instrument Calibration Procedures (ICPs). Approved ICPs are listed in NAVSEA OD 45845, Metrology Requirements List (METRL). In the event that an ICP does not exist for an instrument to be calibrated, the Measurement Science Directorate, Naval Surface Warfare Center, Corona Division (NSWCCOR) must be notified using a Calibration Problem Report. If NSWCCOR authorizes the calibration activity to develop an ICP or Local Calibration Procedure (LCP), it shall be developed according to Navy METCAL instructions for developing calibration procedures utilizing NAVAIR 17-35TR-04 (Requirements for Preparation and Submission of Instrument Calibration Procedures) to provide guidance. The procedure shall be submitted to NSWCCOR for technical review and approval.

3. Certificates and Reports

When a calibration certificate or report is issued, the results of the calibration, or series of calibrations carried out by the calibration activity shall be accurate, clear, unambiguous and objective, in accordance with any instructions in the calibration methods. The results shall include all the information required by the method used. Certificates and reports shall be developed using Appendix B of NAVSEA 04-4734 (Naval and Marine Corps Calibration Laboratory Audit/Certification Manual) to provide guidance.

C. Subcontract Calibrations/Repairs

1. The Contractor may subcontract calibrations/repairs when:

a. The subcontractor offers fixed published prices for the calibration and/or repair of the model of equipment that NSWCCD owns and requires calibration/repair. The Contractor shall obtain the COR's approval before using these fixed price services if the subcontractor's cost is greater than \$2,500.00 per purchase order. In order to utilize a Subcontractor for calibrations, the Subcontractor shall comply with the requirements of ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements).

b. The COR approves subcontracting the repair or calibration of the equipment because:

(1) The NSWCCD calibration and repair laboratory is not equipped to perform all of the repairs and or calibrations required.

(2) The Subcontractor can perform the calibrations and repairs more cost effectively and/or faster.

2. The Contractor shall be responsible for all efforts required for subcontracting including appropriately packing, shipping, or otherwise transporting the equipment to and from the Subcontractor and for accepting the Subcontractor's work.

3. The Contractor shall be responsible for ensuring that the Subcontractor is in compliance with ANSI/NCSL Z540-1-1994 when providing calibration services. The contractor must maintain a file of approved vendors with supporting documentation.

D. Repair Parts, Materials, and Supplies

1. The Contractor shall provide all parts, materials, and supplies necessary to do work other than that indicated in Section VII of the Statement of Work as GFE. The Government will supply the Contractor with the repair parts it currently has in storage shelves, but as these supplies are used, the Government will not supply replacements. The Contractor shall obtain the COR's approval before buying the parts, materials, or supplies only if the cost of each purchase order issued is more than \$2,500.00. Also, before ordering the parts, materials, and supplies, the Contractor shall review NSWCCD in-house parts lists and Federal Supply lists for the items. If the items are on these lists and they are lower in cost than the Contractor's purchase price, the Contractor shall notify the COR who will determine whether the Government or the Contractor will procure the items.

2. The COR may also require the on-site manager to recommend repair parts to be purchased, with associated price information, for servicing specific equipment. After the COR approves the recommendations, the on-site manager shall initiate ordering the parts.

3. The COR may require the on-site manager to make an emergency pickup or delivery of parts, materials, or supplies. If the COR specifies that the pickup or delivery is an emergency, the on-site manager shall have a person dispatched within a reasonable time to meet the deadline.

4. The Government shall be supplied with invoices detailing quantity, type, and unit cost of each item procured. All parts, materials, and supplies purchased to support this contract become government property upon payment of the invoices.

E. Equipment Repairs

The Contractor shall maintain records for each piece of equipment repaired. Each record documenting a repair action shall include a

diagnosis of the problem, the action taken to resolve the problem, the number of hours expended, the materials used, and their cost.

F. Cleaning of Equipment

In the course of calibrating and repairing equipment, the contractor shall identify equipment that requires cleaning. The on-site manager will provide this information to the COR and the COR will determine which items shall be washed and thoroughly dried to improve appearance and functional qualities. All equipment shall be cleaned externally, removing stickers, etc., which do not belong on the equipment. Navy Identification Numbers and NSWCCD Barcodes shall not be removed from any item unless required by the COR.

G. Emergency Repairs and Calibrations

The COR shall designate, to the on-site manager, emergency repairs and calibrations. Emergency repairs and calibrations shall be completed on the same day or within the time frame designated by the COR. The COR may require the on-site manager to have overtime worked to complete the repairs and calibrations by the required date. If the repairs and calibrations cannot be completed within the specified time frame, written notification/justification shall be provided to the COR with an estimated completion date.

NOTE: Overtime shall not be worked unless overtime hours are approved in writing by the COR.

H. On-Site Repair and Calibrations

Equipment requiring repair and calibration is located at NSWCCD facilities and other sites. The COR may require the on-site manager to have equipment removed from the site, transported to the NSWCCD Reference Standards Laboratory or another outside calibration and repair facility, repair and/or calibrate the equipment as required, and then return the equipment to the site. The COR may also require the on-site manager to have a technician go to a site to perform a repair and/or calibration at that location. If the COR specifies that the repair and/or calibration is an emergency, the on-site manager shall have a technician leave for the site within a reasonable time to meet the deadline. The COR may require the on-site manager to schedule and perform periodic maintenance on equipment at on-site locations to ensure that the equipment is in good working condition. The Contractor shall transport all equipment and tools required to the site location.

I. Repair Parts Inventories

The Contractor shall maintain the repair parts storage areas based on technical instructions by the COR to the on-site manager. All repair parts shall be properly labeled and in their appropriate storage locations. When the supply of any repair parts is below a threshold set by the COR, the Contractor shall order the replacement parts. The on-site manager shall prepare a written list of recommended repair parts to be purchased and their cost, for equipment identified by the COR. The on-site manager shall

order all parts which the COR has approved. The Contractor shall maintain a computer based parts inventory system containing information which includes part numbers, item descriptions, barcodes, manufacturers, cross references/substitutions, quantity on hand, minimum quantity required, and part cost. This system shall be updated with additions, deletions, and other changes as parts are received or consumed.

J. Repair Parts Quality

Repair parts shall equal or exceed the quality, performance, and reliability of the original parts they replace.

K. Calibrations/Repairs At The Contractor's Own Facilities

Equipment may be calibrated and/or repaired at the Contractor's own facilities if:

1. The facilities and measurement standards meet all Navy requirements. The calibration laboratory shall comply with ANSI/NCSL Z540-1-1994 (American National Standard for Calibration - Calibration Laboratories and Measuring and Test Equipment - General Requirements);

2. The Contractor's proposed rates for calibrations and repairs are agreed to; and

3. Calibration and/or repair at the Contractor's facilities is authorized and approved by the COR.

Acceptance testing of equipment calibrated and/or repaired at the Contractor's own facilities shall be documented and subject to the same quality control procedures as equipment calibrated and/or repaired at other off-site facilities.

L. Documentation Errors

In the course of performing calibrations and repairs, the Contractor shall review all written manuals and procedures for errors. The on-site manager shall bring any errors thus discovered to the COR's attention. The on-site manager shall have the errors documented and corrected before the equipment is calibrated, maintained, repaired, or tested.